

1 / 22

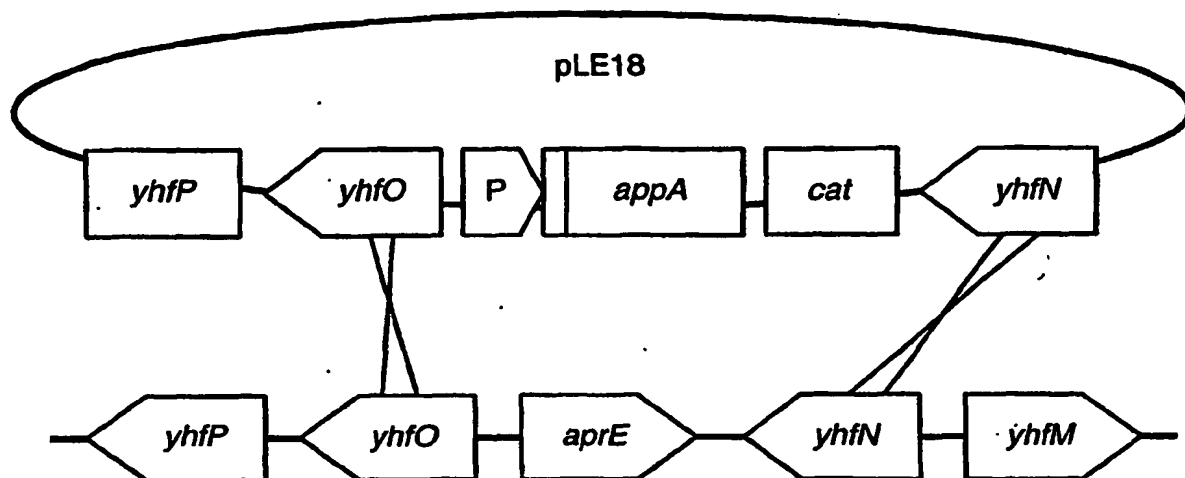


FIG._1

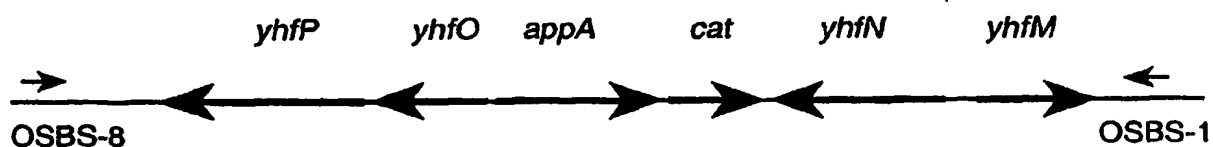


FIG._2

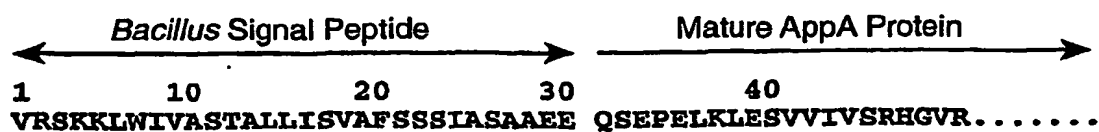
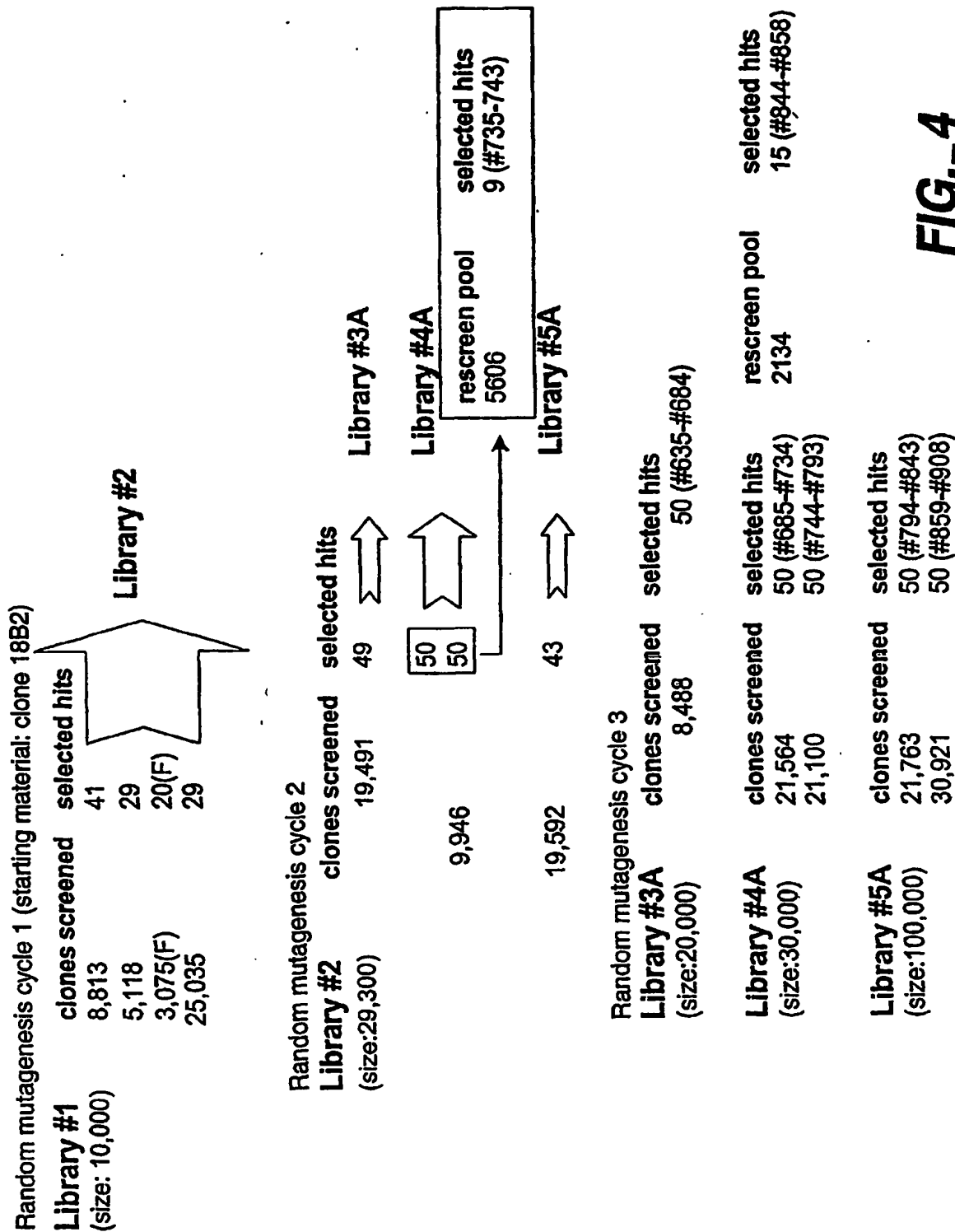


FIG._3

2 / 22



3 / 22

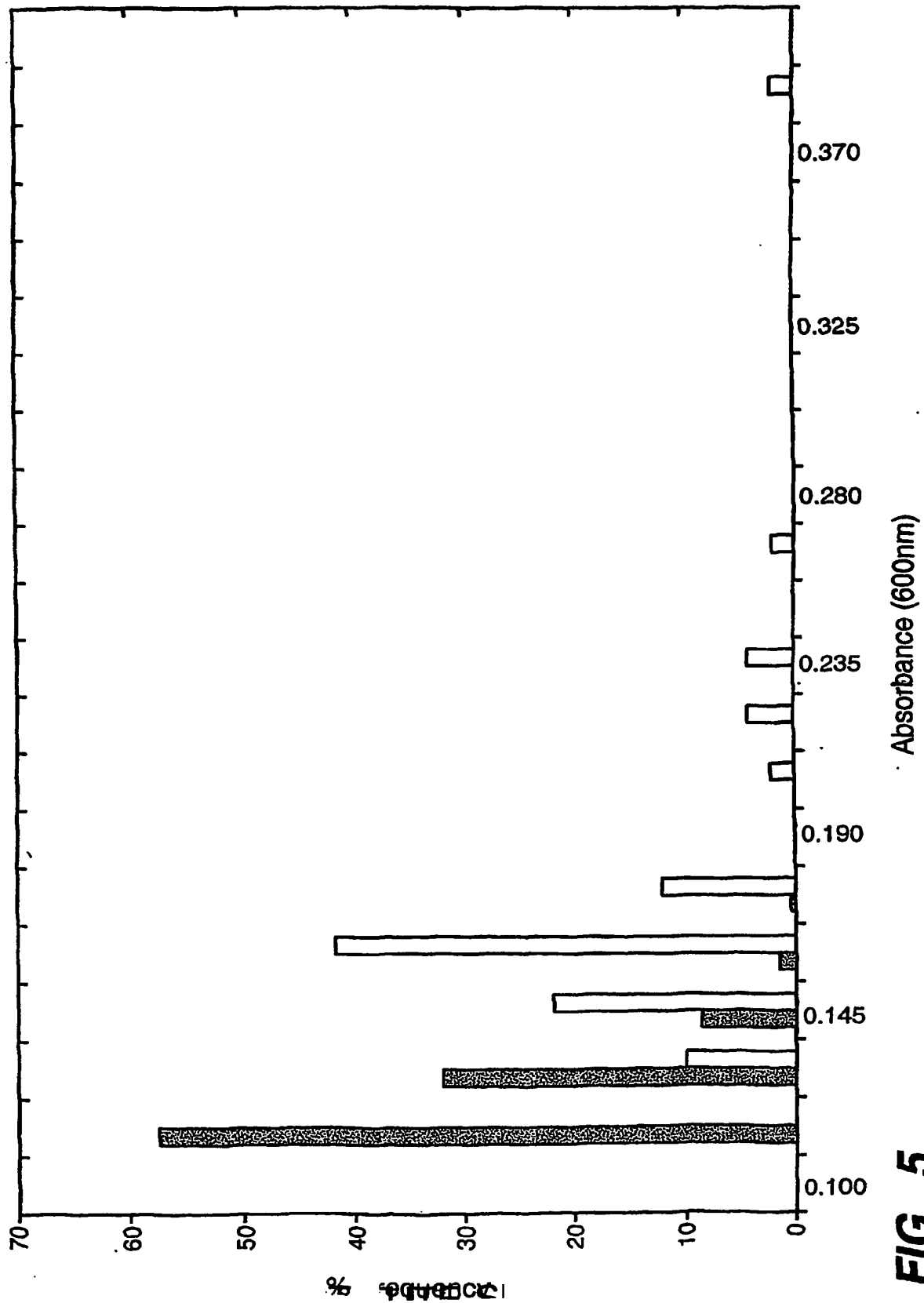


FIG. 5

4 / 22

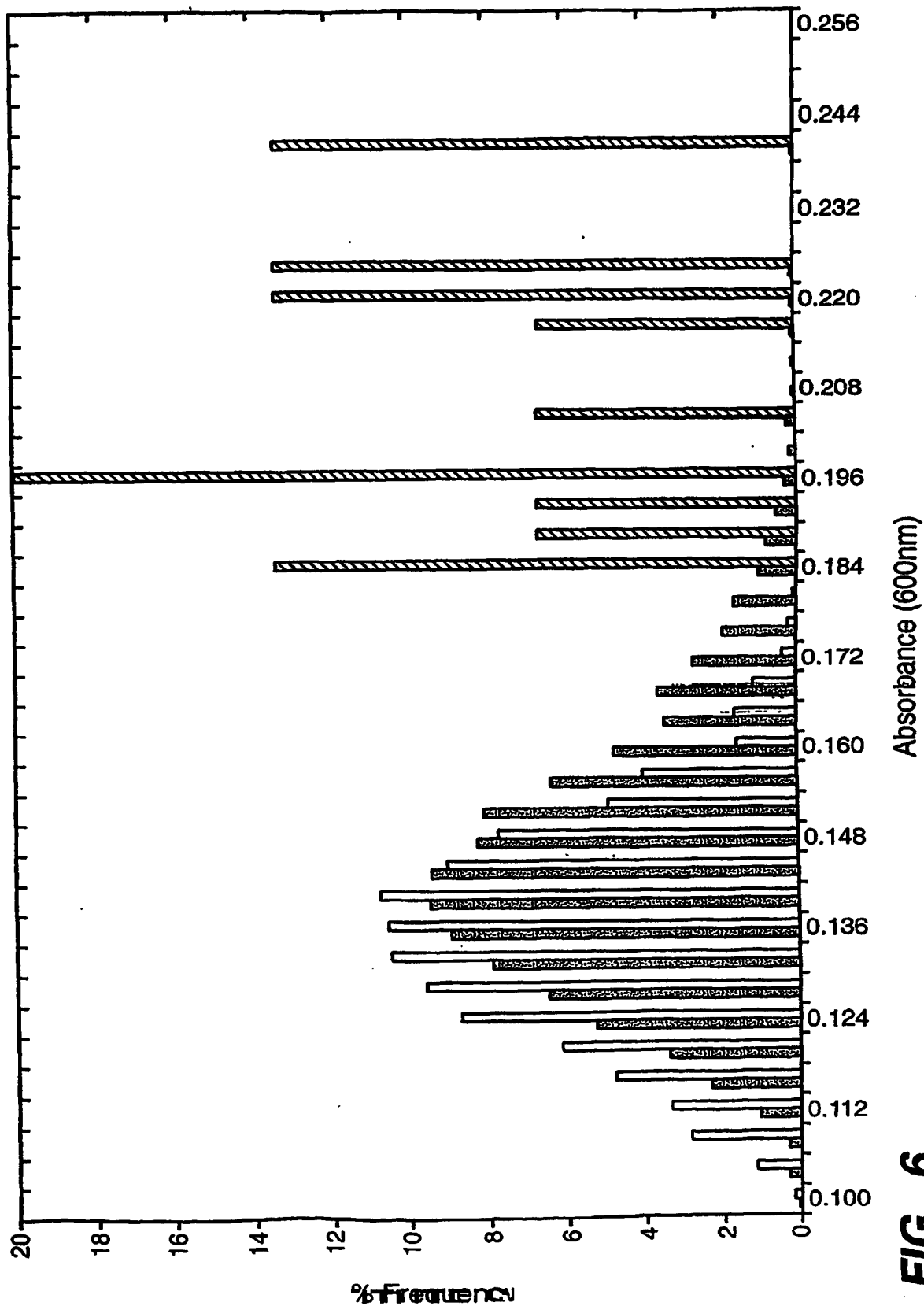
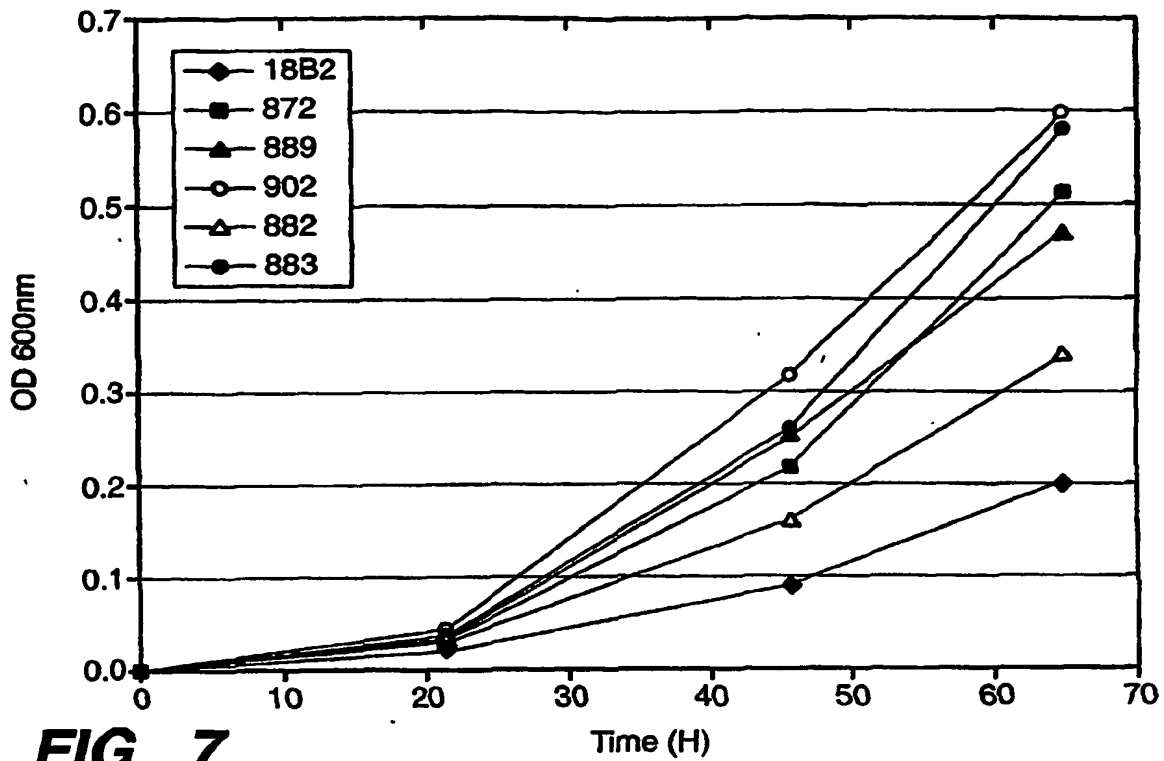
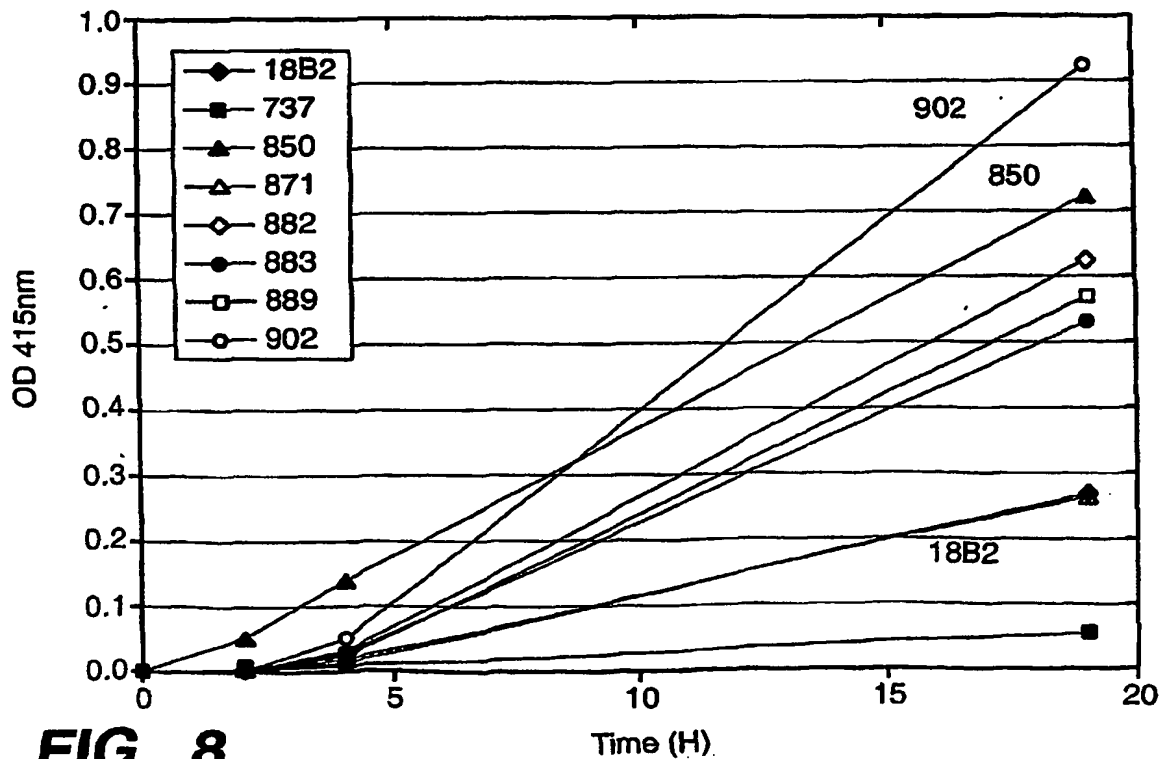
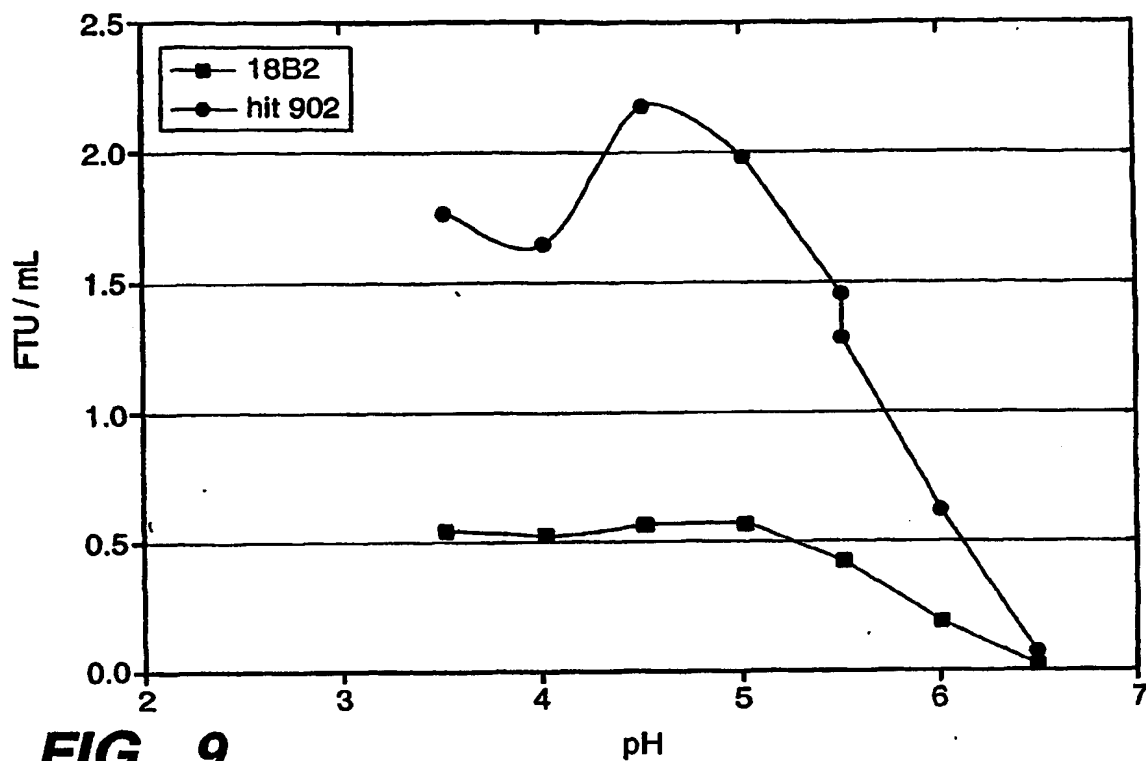
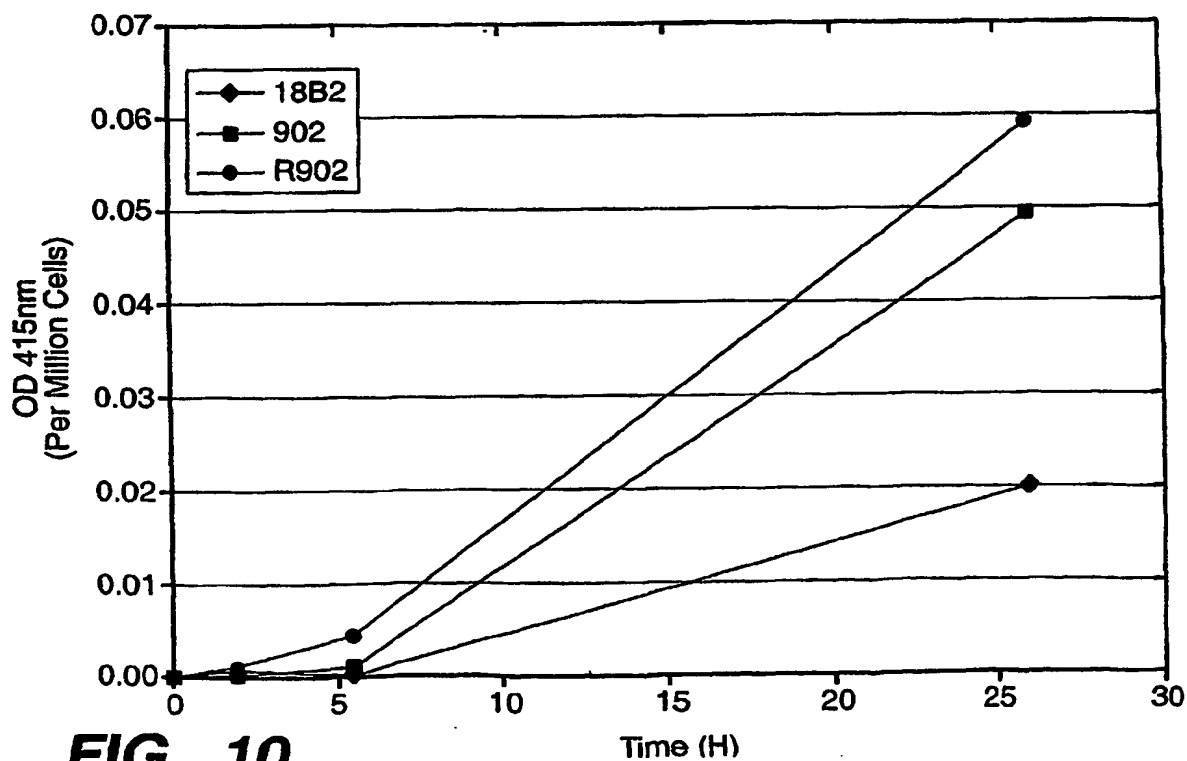


FIG. 6

5 / 22

**FIG. 7****FIG. 8**

6 / 22

**FIG. 9****FIG. 10**

7/22

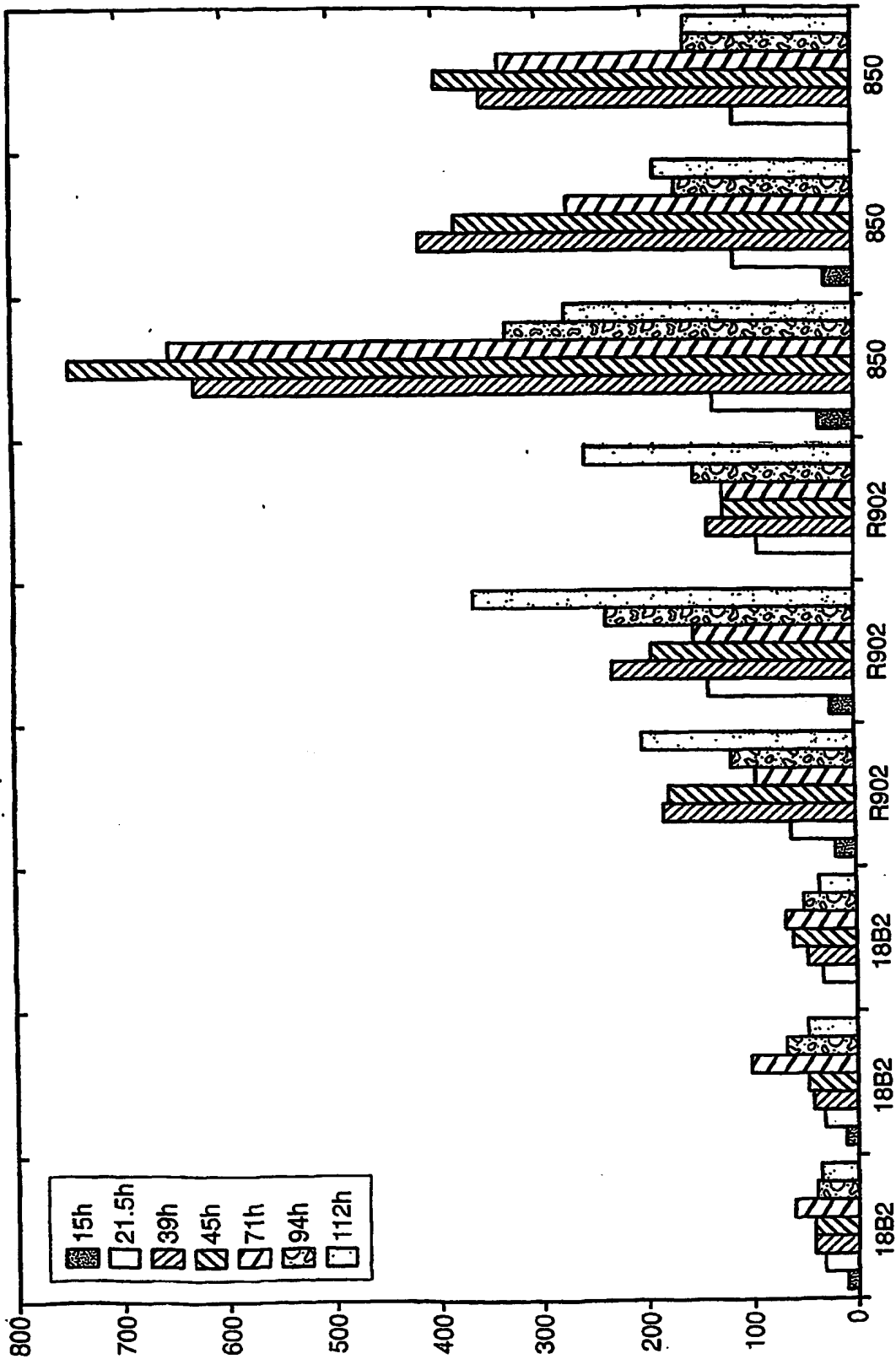


FIG. 11

8 / 22

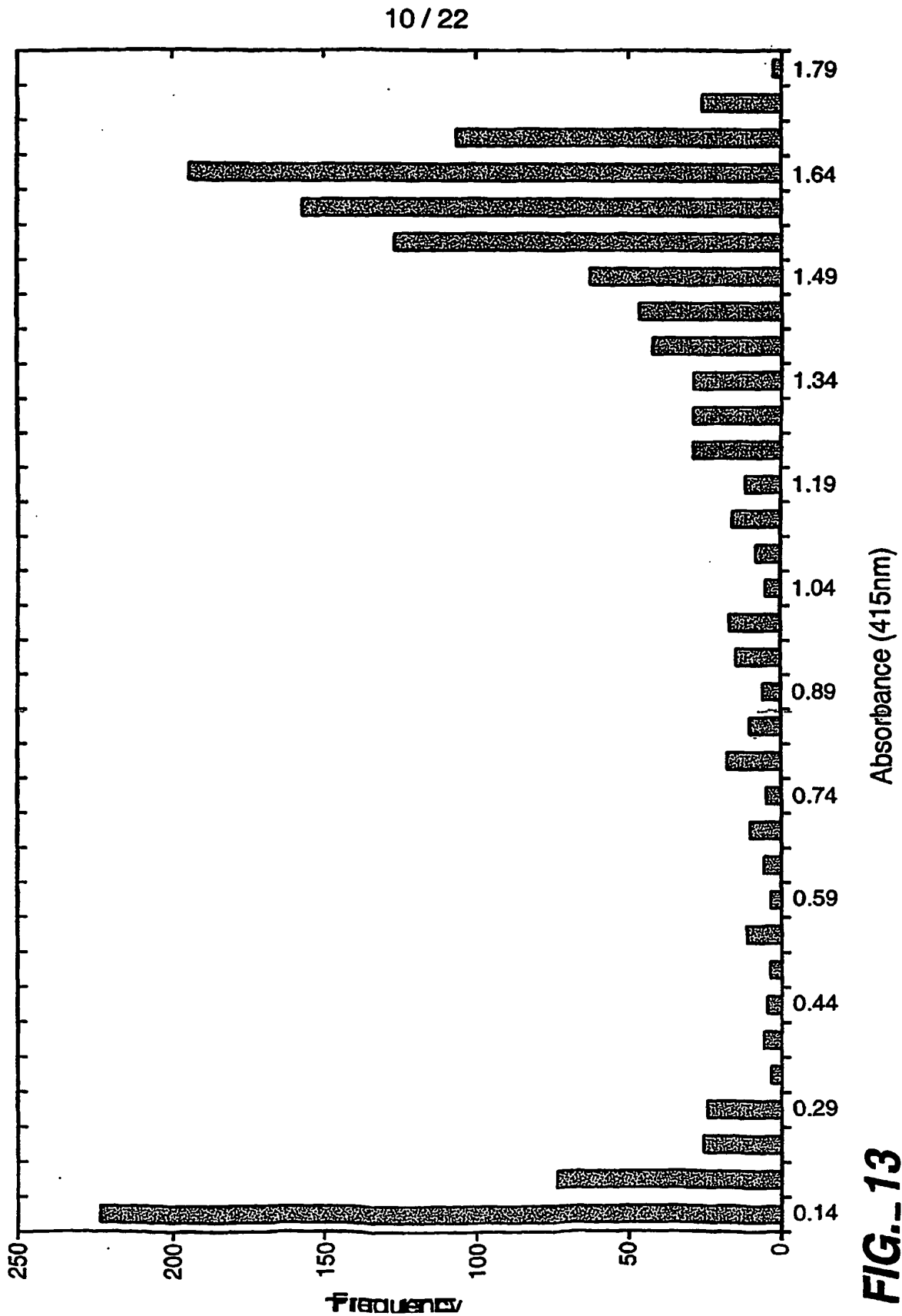
	1	10	20	30	40	50	60	70	80	90
BC18B2	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY679	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY735	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY736	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY846	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY850	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
HY902	VR	SK	LW	IV	AST	ALL	IS	VA	FS	SS
BC18B2	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY679	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY735	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY736	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY846	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY850	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
HY902	YQ	RL	VA	DG	LL	AK	KG	CP	QS	GV
BC18B2	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY679	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY735	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY736	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY846	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY850	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN
HY902	SI	AD	FT	GH	RO	TA	FR	EL	RV	LN

FIG. 12A

9/22

	280	290	300	310	320	330	340	350	360	
BC18B2	HQWNTLLSLHNAQFYLLQRTPEVARSRA	PLDLIKTALT	PHPPQKQAYGVTL	PTSVLFI	AGHD	TNLANLG	GALELN	WTLP	GPDPNT	PPG
HY679	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HY735	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HY736	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HY846	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HY850	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HY902	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	370	380	390	400	410	420	430	440		
BC18B2	GELVFERWRRLSDNSQWIQVSLVFQITLQ	QMRDKT	PLSLNTP	PGEVKLT	LAGCEERNAQ	CMCSLAG	FTQIVNEAR	IPACSL		
HY679	.....	.....	.....	.....	.....	.....	.....	.....
HY735	.....	.....	.....	.....	.....	.....	.....	.....
HY736	.....	.....	.....	.....	.....	.....	.....	.....
HY846	.....	.....	.....	.....	.....	.....	.....	.....
HY850	.....	.....	.....	.....	.....	.....	.....	.....
HY902	.....	.....	.....	.....	.....	.....	.....	.....

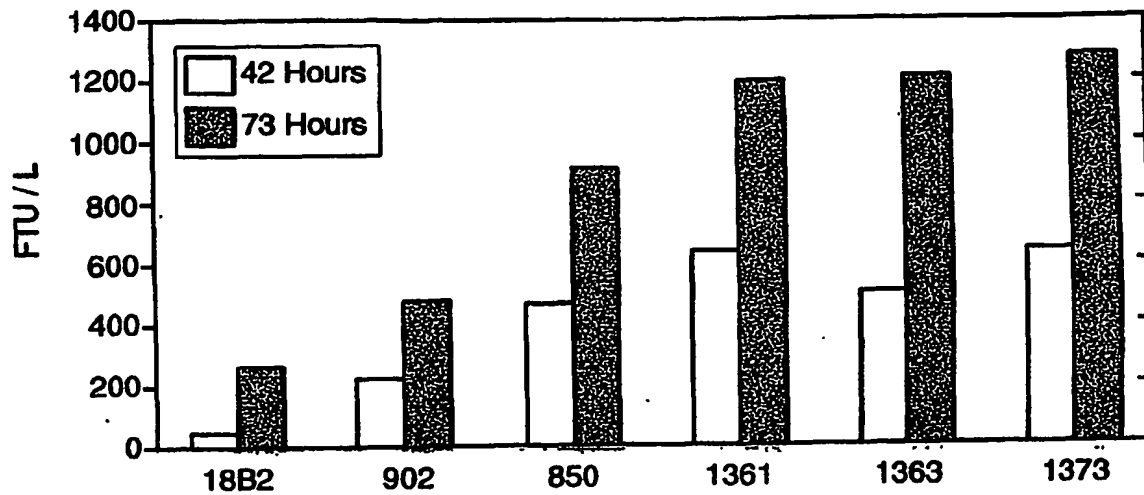
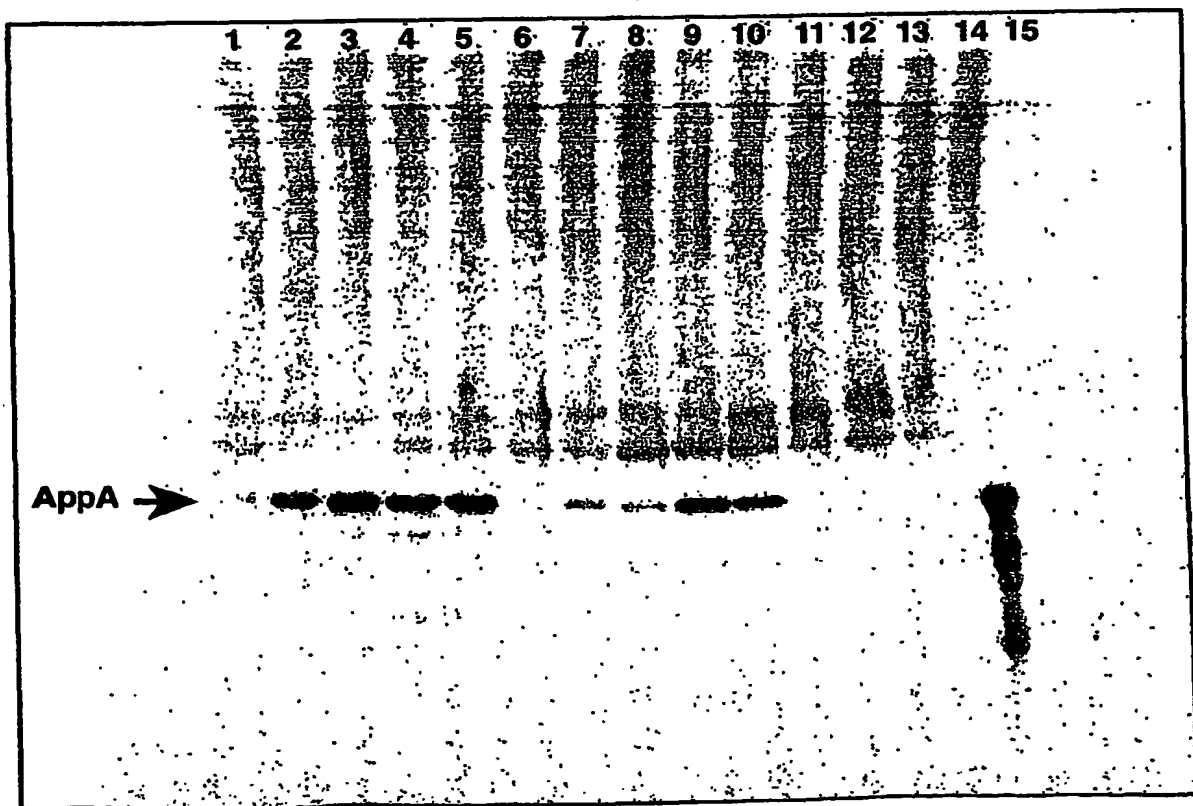
FIG.-12B



[illegible]

FIG. 14

12 / 22

**FIG. 15****FIG. 17**

13 / 22

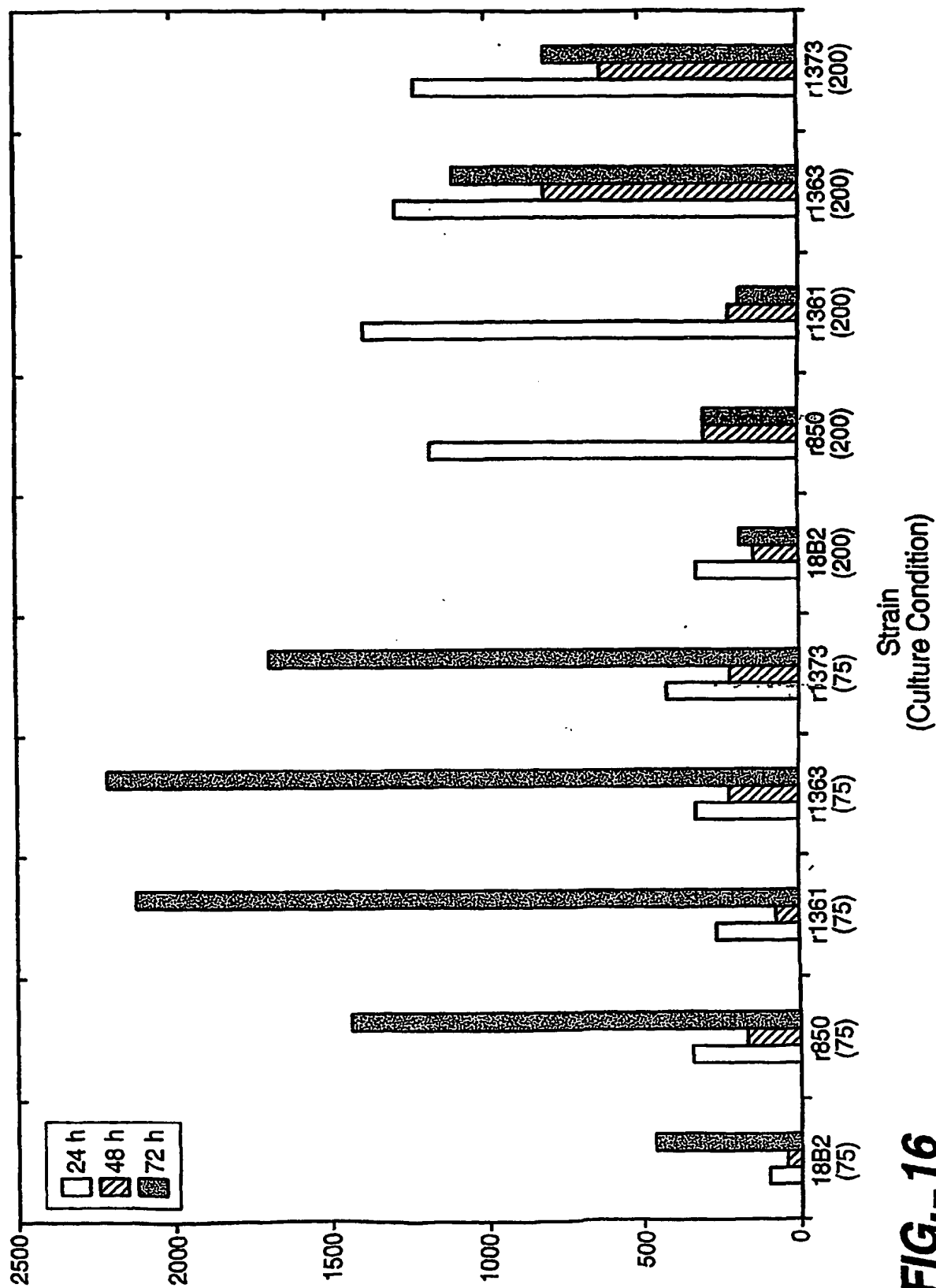
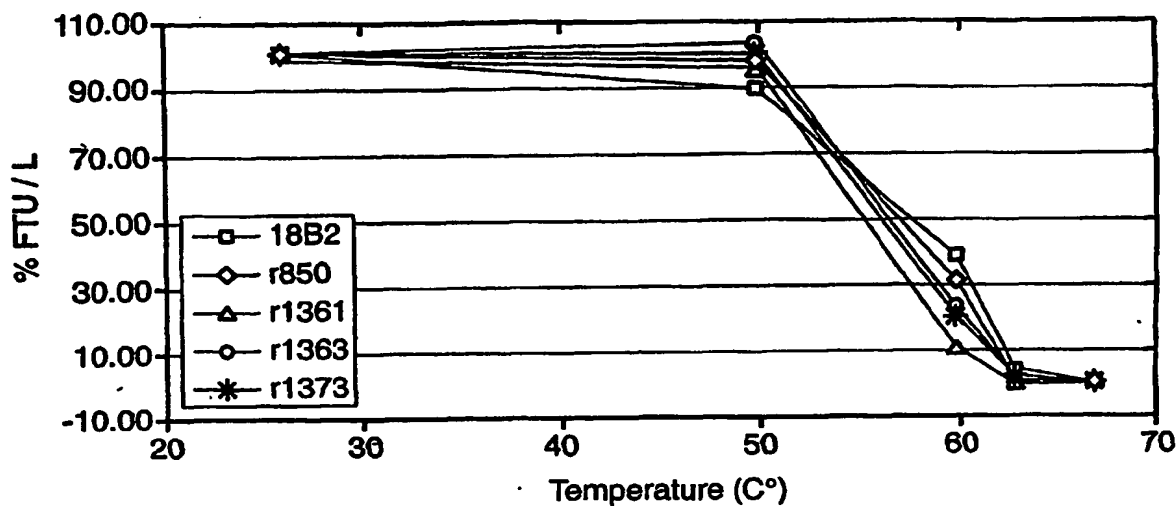


FIG. 16

14 / 22

**FIG. 18**

Oligonucleotide primers and combinations thereof used to amplify *AppA* related sequences.

*AppA*3F 5' -atgaaagcgatcttaat

*AppA*5F 5' -cgtcattggtgtgctgctcc

*AppA*GF 5' -cgccagaggttgcccg

*AppA*CR 5' -gcggctggcaacctctgg

*AppA*4R 5' -ttacaaactgcacgcgcgtatgcgtgctgcttcatt

Primer combinations:

AppA 3F+4R = 1.3kb product

AppA 3F+7R = 0.86kb product

AppA 5F+4R = 1.19kb product

AppA 6F+4R = 0.44kb product

AppA SF+7R 0.75kb product

FIG. 19

15 / 22

Source	10	20	30	40	50	60	70	80
<i>E. coli</i>	MKAILPFLS	LLIPLTQSA	FAQSEPELKL	ESWIVSRHG	VRAPTATQOL	MODVTPDAMP	TWPVKLGMLT	PRGSELLAYL
<i>Shigella flexnaraii</i>	.....S	.....	.....	.....	.....	.....	.....	.....F
<i>Shigella sonnei</i>
<i>Pasteurella aerogenes</i>
<i>Enterobacter cloacae</i>F
<i>Enterobacter agglomerans</i>
<i>Proteus vulgaris</i>
Too Compost Enrichment
Source	90	100	110	120	130	140	150	160
<i>E. coli</i>	GHYORORLVA	DGLLAKKGGP	QSGQVAIIAD	VDERTRTGGE	AFAGLAPDC	AITVHTQADT	SSPDPLENPL	KTGVCQLDNA
<i>Shigella flexnaraii</i>P	.....	.....	.....	.....	.....	.....
<i>Shigella sonnei</i>
<i>Pasteurella aerogenes</i>
<i>Enterobacter cloacae</i>P	.....	.....	.....	.....	.....	.....
<i>Enterobacter agglomerans</i>P	.....	.....	.....	.....	.....	.....
<i>Proteus vulgaris</i>
Too Compost Enrichment
Source	170	180	190	200	210	220	230	240
<i>E. coli</i>	NVTDAILSRA	GGSIADFTGH	ROTAFRELER	VLNFPQSNIC	LKREKQDESC	SILTOALPSEL	KVSADNVSLT	GAVSLASMLT
<i>Shigella flexnaraii</i>
<i>Shigella sonnei</i>A	.....
<i>Pasteurella aerogenes</i>
<i>Enterobacter cloacae</i>
<i>Enterobacter agglomerans</i>
<i>Proteus vulgaris</i>F	.....	.....	.....	.....
Too Compost EnrichmentC	.....

FIG. 20A

Source	250	260	270	280	290	300	310	320
<i>E. coli</i>	EIFLLQQAQG	MPEPGHGRIT	DSHQWNTLS	LHNAQFYLLQ	RTPEVARSR	TPLLDLIKTA	LTPHPQKQA	YGVTLPTSVL
<i>Shigella flexnarii</i>	.....	.....	.....	.....	.....	.....	.....	.....
<i>Shigella sonnei</i>	.....	.....	.....	.....	.....	.....	.....	.....
<i>Pasteurella aerogenes</i>	.....	.....	.....	.....	.....	.....	.....	.....
<i>Enterobacter cloacae</i>	.....	.....	N.....	.....	.....	.....	.....	.....
<i>Enterobacter agglomerans</i>	.....	.....	.....	.....	.....	.....	.....	.....
<i>Citrobacter vulgaris</i>	.....	.....	.....	.....	.....	.....	.....	.....
No Compost Enrichment	.....	.....	.....	.....	.....	.....	.....	.....
<i>E. coli</i>	330	340	350	360	370	380	390	400
<i>Shigella flexnarii</i>	FIAGHDTNLA	NLGGALELNW	TLPQGDNTTP	PGGELVFERN	RRLSDNSQWI	QVSLVFOTLQ	QMRDKTFLSL	NTPPGEVKLT
<i>Shigella sonnei</i>	.....	.....	.....	.....	.....	.....	.....	.....
<i>E. coli</i>	410	420	430	440				
<i>Shigella flexnarii</i>	LAGEERNAG	GMCSLAGFTQ	IVNEARIPAC	SL*				
<i>Shigella sonnei</i>	.....	.....	.....	.....

16 / 22

FIG. 20B

17 / 22

1	*	20	*	40	*	60	*	80
<i>E. coli</i>	ATGAAAGCGATCTTAATCCCATTTTATCTCTTCTGATTCGGTTAACCCCGCAATCTGCATTCGCTCAGAGTGAGCCGGA							
<i>S. flex.</i>	-----T-----							
<i>S. sonn.</i>	-----							
<i>P. aero.</i>	-----							
<i>E. cloa.</i>	-----							
<i>E. aggl.</i>	-----							
<i>P. vulg.</i>	-----							
compost	-----							
	*	100	*	120	*	140	*	160
<i>E. coli</i>	GCTGAAGCTGGAAAGTGTGGTGATTGTTCAGTCGTCATGGTGTGCGTGTCTCCAAACCAAGGCCACGCAACTGATGCAGGATG							
<i>S. flex.</i>	-----							
<i>S. sonn.</i>	-----							
<i>P. aero.</i>	-----							
<i>E. cloa.</i>	-----							
<i>E. aggl.</i>	-----							
<i>P. vulg.</i>	-----							
compost	-----							
	*	180	*	200	*	220	*	240
<i>E. coli</i>	TCACCCAGACGCATGGCCAAACCTGGCCGGTAAAACTGGGTGGCTGACACCGCGGGTGGTGAGCTAATCGCCCTATCTC							
<i>S. flex.</i>	-----T-----							
<i>S. sonn.</i>	-----							
<i>P. aero.</i>	-----							
<i>E. cloa.</i>	-----T-----							
<i>E. aggl.</i>	-----							
<i>P. vulg.</i>	-----							
compost	-----							

FIG._21A

10/524234

18 / 22

* 260 * 280 * 300 * 320
E. coli GGACATTACCAAGCCAGCGTCTGGTAGCCGAGGATTGCTGGCGAAAAGGGCTGCCCGCAGTCTGGTCAGGTCGCGAT
S. flex. -----G-----A-----T-----C-----
S. sonn. -----
P. aero. -----
E. cloa. -----G-----A-----T-----C-----
E. aggl. -----A-----T-----C-----
P. vulg. -----
compost -----

* 340 * 360 * 380 * 400
E. coli TATTGCTGATGTCGACGAGCGTACCCGTAAACAGCGAAGCCTTCGCCCGCGGTGGCACCTGACTGTGCAATAACCG
S. flex. -----
S. sonn. -----
P. aero. -----
E. cloa. -----
E. aggl. -----
P. vulg. -----
compost -----

* 420 * 440 * 460 * 480
E. coli TACATACCAGGCAGATACGTCCAGTCCCGATCCGTTATTATCCTCTAAAACTGGCGTTGCCAACTGGGATAACGG
S. flex. -----T-----
S. sonn. -----
P. aero. -----T-----
E. cloa. -----
E. aggl. -----
P. vulg. -----T-----
compost -----

FIG..21B

19/22

* 500 * 520 * 540 * 560
E. coli AACGTGACTGACGGATCCTCAGCAGGGCAGGAGGTCAATTGCTGACTTTACCGGGCATCGGCAACGGCGTTTCGCGA
S. flex.-----
S. sonn.-----
P. aero.-----
E. cloa.-----
E. aggl.-----
P. vulg.-----
compost-----

* 580 * 600 * 620 * 640
E. coli ACTGGAACGGGTGCTTAATTTCCGCAATCAAACTTGTCCTTAAACGTGAGAAACAGGACGAAAGCTGTTTCATTAAACGC
S. flex.-----
S. sonn.-----
P. aero.-----
E. cloa.-----
E. aggl.-----
P. vulg.-----T-----
compos.-----

* 660 * 680 * 700 * 720
E. coli AGGCATTACCATCGGAACCTCAAGGTGAGCGCGACAAATGTCTCATTAACCGGTGCGGTAAGCCTCGCATCAATGCTGACG
S. flex.-----
S. sonn.-----G-----
P. aero.-----
E. cloa.-----
E. aggl.-----
P. vulg.-----
compost-----C-----

FIG._21C

20 / 22

* 740 * 760 * 780 * 800
E. coli GAGATATTCTCCTGCAACAGCACAGGAATGCCGGAGCCGGGTGGGGAAGGATCACCGATTACACACAGTGAACAC
S. flex. -----A-----
S. sonn. -----
P. aero. -----
E. cloa. -----A-----
E. aggl. -----A-----
P. vulg. -----
compost -----G-----

* 820 * 840 * 860 * 880
E. coli CTGCTAAGTTGCATAACGGCGCAATTTATTGTGCTACAACGCACGCCAGAGGTTGCCCGCAGCCGCGCCACCCCGTTAT
S. flex. -----
S. sonn. -----
P. aero. -----
E. cloa. -----
E. aggl. -----
P. vulg. -----A-----
compost -----

* 900 * 920 * 940 * 960
E. coli TAGATTGATCAAGACAGCGTTGACGCCCCCATCCCGCAAAACAGGCGTATGGTGTGACATTACCCACTTCAGTGCTG
S. flex. -G-----T-G-----A-----
S. sonn. -----
P. aero. -----
E. cloa. -----
E. aggl. -----
P. vulg. -----
compost -----

FIG. 21D

21 / 22

* 980 1000 1020 * 1040
 E. coli TTTATCGCCGACACGATATAATCTGGCAAAATCTGGCGGCGCACTGGAGCTCAACTGGACGCTTCCCGGTGAGCCGGA
 S. flex. -----T-----
 S. sonn. -----
 P. aero. -----
 E. cloa. -----
 E. aggl. -----
 P. vulg. -----
 compost -----

* 1060 1080 1100 * 1120
 E. coli TAACACGCCCGCAGGTGGTGAACCTGGTGTGTAACCGCTGGCGTCGGCTAAGCGATAACAGCCAGTGGATTCAGGTTTCGC
 S. flex. -----
 S. sonn. -----
 P. aero. -----
 E. cloa. -----
 E. aggl. -----
 P. vulg. -----
 compost -----

* 1140 1160 1180 * 1200
 E. coli TGGTCTTCCAGACTTTACAGCAGATGCGTGATAAAACGCCGCTGTCAATTAATACGCCCGGAGAGGTGAAACTGACC
 S. flex. -----
 S. sonn. -----
 P. aero. -----
 E. cloa. -----
 E. aggl. -----
 P. vulg. -----
 compost -----

FIG. 21E

22 / 22

* 1220 1240 1260 1280
 E. coli CTGGCAGGATGTGAAGCGGAAATGCGCAGGCAATGTCGTTGGCAGGTTTACGCAAAATCGTGAATGAAGCAGCAT
 S. flex. -----
 S. sonn. -----
 P. aero. -----
 E. cloa. -----
 E. aggl. -----
 P. vulg. -----
 compost -----

1309
 E. coli ACCGGCGTGCAGTTTGTA
 S. flex. -----
 S. sonn. -----
 P. aero. -----
 E. cloa. -----
 E. aggl. -----
 P. vulg. -----
 compost -----

FIG. 21F